



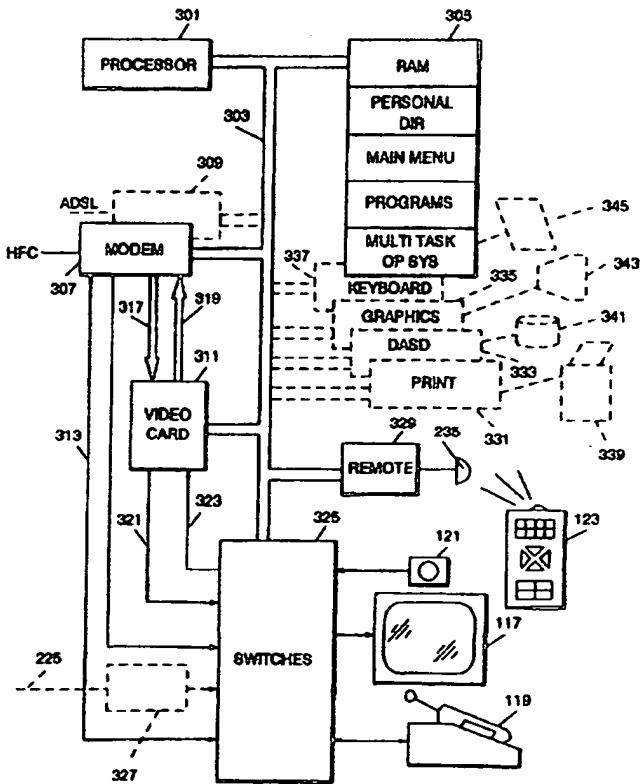
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## (57) Abstract

Apparatus in the form of a TV and video conference connection device having a telephone jack, a mother board, operating system, and adapter cards including a high speed modem such as fiber or ADSL, provides audio-visual communication between a consumer and a vendor of goods and services for interactive completion of application forms in order to complete transactions such as banking, insurance, securities, product sales, service contracts and the like. Optional I/O devices may be attached to the connection device in order to print an application or contract and allow personal computing. The transaction is initiated by the consumer who causes the connection device to obtain the vendor's communication number from a network directory or a personal directory stored in the connection device. As the desired vendor scrolls into a highlighted area on the TV screen, the consumer presses a button on a hand held remote which causes the connection device to make a video conference connection. If the vendor facility is found to be busy, a temporary return may be taken to a previously active function such as TV or personal computing in order that consumer satisfaction be retained while the number is re-dialed to reach the selected vendor. When the connection is made, the temporary return is terminated and a ring back signal is sent to the consumer telephone in order to allow the consumer to conveniently converse with the vendor's representative.



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## VIDEO DIRECTORY ENTERTAINMENT AND MARKETING METHOD AND APPARATUS

### Field of the Invention

This invention relates to video on demand systems and methods for marketing consumer goods and services, and more particularly to one on one human interaction in consumer initiated transactions.

### Background of the Invention

The marketing of goods and services is becoming increasingly more costly and competitive as the various countries of the world become more affluent and sophisticated. The traditional provision of retail stores and offices including banks where goods and services may be displayed for selection by a consumer or other customer is costly. Catalogs and cable shopping channels significantly reduce sale costs but have their own disadvantages. Catalogs for example are expensive to print and distribute, and may not be readily at hand when a consumer is inspired to make a purchase. Shopping broadcast channels are generally limited to serial presentation of items and therefore are effective for stimulating impulse purchases. However, if the items being presented by the channel are not the ones of interest to the consumer, sales will be lost to other outlets.

An example of a two way cable system is shown in U.S. Patent 5,475,585 to Bush. In this patent, a central station broadcasts menus over a cable channel and the consumer makes choices of different menus and finally chooses a product or service. In Figure 8 of this patent, the product is a ticket. A transaction processor handles the payment from a credit card reader at the set top box. All information is located at the

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one central station and must be kept current for each product.

U.S. Patent 5,208,665 to McCalley et al. provides presentations which are digitally recorded at 5 a CATV company's headend. Upon subscriber request by Touch Tone to a local access point, the digital presentations are sent to field presentation players in local operating centers where they are converted to analog, recorded and played back to the subscriber who 10 chooses sub-menu presentations from graphical overlay menus using a Touch Tone pad as the selection input. As described in column 4, catalog presentations are prepared in advance.

U.S. Patent 5,479,491 issued to Garcia 15 integrates voice mail, voice conversion and PBX to achieve a low cost system. This reference shows an interface to a TV cable headend for use in shopping applications.

In order to reduce the cost of presenting 20 goods or services to potential consumers, many different self service terminals have been proposed so that a consumer may gather information about the various products and purchase the products without the need to provide a sales person to interact with the 25 consumer face to face. An early example is the ubiquitous coin vending machine. Later examples are cash dispensing automated teller machines and computer terminal accessed networks such as Prodigy® or other internet providers.

30 In addition to the problem of finding a vendor for a desired good or service, many transactions require that a complex application be filled out in order that a service be contracted for, such as life insurance or a mortgage. These types of transactions 35 have not been suited for self service transaction processing because the consumer may skip over important

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fields that are not comprehended and may become frustrated entering data in fields that may not apply to the unique need of this consumer.

Often the consumer chose to go to a location  
5 where a sales associate or finance officer was personally located in order to obtain the intangible benefit of face to face and one on one interaction. Therefore, in order to effectively compete, many institutions remained open for extended hours with  
10 expensive on site staff awaiting the arrival of potential customers. In these environments, the consumer and the sales associate or insurance agent for example would discuss the different options available to the consumer. The consumer's questions could be  
15 answered in detail while the consumer was able to observe the mannerisms and expressions of the associate, all tending to provide additional confidence building information to the consumer. This often leads to consummation of a transaction that the consumer  
20 would not have dared to consummate from a self service terminal. It may be harder to say no to a real person than to an inanimate machine.

Still more recently, personnel assisted point of sale kiosks have been provided through the teaching  
25 of the present inventor in U.S. Patent 5,231,571 which has solved many of the above described disadvantages of self service terminals. However, this patent describes that the central station seizes control of the remote terminal and displays images stored at the remote  
30 terminal to the consumer under control of the central station. The need to store the images of application forms, goods and services at the remote site may add to the cost and complexity of the remote terminal.

The process of providing goods and services  
35 to consumers at remote service terminals located at branch banks and in shopping malls has significantly reduced the costs of serving these consumers. However

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- many consumers find that the inconvenience of going to a location away from the home to obtain such goods and services results in postponing such purchases, often indefinitely, or in other cases until it is convenient
- 5 to obtain the products as part of a shopping trip away from the home.

#### Summary of the Invention

- In accordance with the instant invention, the above problems may be significantly reduced by
- 10 providing a connection device and directory method for interconnecting TV cable and telephone communication systems into an effective video marketing network and providing therein a convenient means for a consumer to reach and transact business with a vendor of the
- 15 consumer's choice. The invention solves a major problem with video marketing technology: identification to a consumer of sites, such as internet sites, which use video technology. The invention provides a video conference directory of vendors who
- 20 market goods and services by video conferencing.

According to the present invention, a consumer may conveniently initiate a video conference with a vendor of goods and/or services identified from the video conference directory, directly from a

25 connection device which may be located in the home. After initiating a video conference, the consumer may interact with a human representative of the vendor, whose moving image is presented on the consumer's display screen. The representative of the vendor may

30 assist the consumer in understanding the application form or unique information while entering verbally communicated consumer information into the application form or into an order form. A transaction specified by the completed application form or the completed order

35 form may be consummated in real time.

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- According to another aspect of the invention, the connection device may be conveniently controlled in a multi-tasking manner by a consumer using a hand held remote control device which is also used to control other consumer products. While awaiting access to a vendor video conference facility, the consumer may continue with a function that was in progress. For example, when a directory location is busy, a temporary return to television programming may be provided.
- Improved marketing of goods and services using video conferencing is thereby provided.

Brief Description of the Drawings

Figure 1 is a block diagram showing the relationship of a consumer's TV set, telephone, and a connection device to cable entertainment network vendors and vendors of goods and services.

Figure 2 is a perspective view of an embodiment of a connection device of the invention.

Figure 3 is a block diagram of the circuitry of a preferred embodiment of a connection device.

Figure 4 is a diagram of functions available from the main menu showing how temporary returns are made to previously active functions.

Figure 5 is a flow diagram showing operations of a connection device in the initiation of a directory inquiry by a consumer.

Figure 6 is a flow diagram showing operations of a connection device in cooperation with the network directory in the selection of a category by a consumer.

Figure 7 is a flow diagram showing operations of a connection device in cooperation with the network directory in the selection of a subcategory by a consumer.

Figure 8, comprising Figures 8A and 8B is a flow diagram showing operations of a connection device

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in cooperation with a network directory in selection and connection to a vendor by a consumer.

Figure 9 is a flow diagram showing operations of a connection device in cooperation with a connected 5 vendor station to present and sell products in the form of goods and or services provided by the vendor.

Figure 10 shows a display of the main menu.

Figure 11 shows a display of the category menu.

10 Figure 12 shows a display of a continuation of the category menu.

Figure 13 shows a subcategory menu under the retail category.

15 Figure 14 shows a subcategory menu under the finance category.

Figure 15 shows a vendor menu under the retail clothing category.

#### Detailed Description of Preferred Embodiments

The present invention now will be described 20 more fully hereinafter with reference to the accompanying drawings, in which preferred embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein; rather, these embodiments are provided so 25 that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art. In the drawings, the thickness of layers and regions are exaggerated for clarity. Like 30 numbers refer to like elements throughout.

The structures and modules by which the preferred embodiment of the invention may be implemented in a network appear in Figure 1 where the relationship of a consumer's TV set 117, telephone 119, 35 and the set top connection device 111 is shown in relation to telephone and cable entertainment network

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providers, the network directory and to vendors of goods and services. The term, goods, as used hereinafter include any type of goods such as processed foods, manufactured products and intangible products  
5 such as financial vehicles and instruments but are not to be deemed limited to the above enumerated examples. Likewise, the term services, is meant to include all services that may be delivered to a consumer, either directly or over a period of time such as insurance,  
10 banking, information, shopping, and personal services but is not to be considered as limited to these examples.

Connection device 111 is shown here as a separate set top box but it will be understood by those  
15 skilled in the art that it can be integrated into a television device or other consumer electronic package without departing from the scope of the invention.

Connection device 111 has a conventional cable TV conversion portion 113 and a video directory  
20 entertainment and marketing portion 115 in accordance with the invention. The cable portion 113 performs the conventional conversion of entertainment cable channel frequencies to the frequency of one of the channel frequencies receivable by the TV set. Often, TV  
25 channel 2, 3 or 4 is chosen as the TV channel to which each selected cable channel frequency will be converted.

The video directory entertainment and marketing portion 115 has telephone connection  
30 features, advanced communication architecture connection features and remotely controlled switching features that allow a consumer to not only access entertainment providers from a cable network but to access information related to goods and services  
35 desired by the consumer and provided by vendors of goods and services via advanced communication architectures such as ADSL. A video camera 121 may be

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used at the consumer's option to show existing products, documents, and otherwise display images of desired items to a vendor's representative for better communication, as well as the consumer's own personal 5 image if that is the consumer's choice. If a consumer does not want to be seen, the consumer may stand behind the camera while items are being shown to the representative or may place a lens cap over the camera or turn off the camera. An advantage of including a 10 camera in the set top connection device is that the device can then be used for personal video conversations with others having similar set top connection devices. The personal directory described hereinafter facilitates such personal video 15 conversations.

The remote control feature of the invention is responsive to a hand held remote unit 123 which is preferably of the type that is universal and programmable to control a variety of devices such as a 20 TV set, a VCR, a cable box, a radio/cassette/CD player and other devices using an "auxiliary" function.

In addition to the above described modules, an optional keyboard 229, shown in Figure 2, permits the connection device to be used as a powerful personal 25 computer.

Connected to the other side of the network 125, are a large number of video computer terminals 127 of vendors of goods and services. Each of these terminals 127 has access to large data bases of the 30 descriptive video information of goods and/or services that are available from a particular vendor as well as form documents that will be interactively filled out by the vendor's representative and the consumer in communication with each other. In addition, each 35 terminal includes personal video capability in the form of a camera 129 mounted near the display screen to capture the image of the vendor's representative.

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Additionally, a local internet connection provider 131 may have a channel on the network 125 in order to make internet access available to consumers. It will also be recognized by those skilled in the art 5 that existing cable TV shopping channels 133 as described above, may be connected to the network 125 and thereby be made available to the consumer for access using the cable converter as they are currently provided by cable TV companies.

10 In order that each of the many vendors will be known to potential consumers, a network directory facility 135 is provided at the other side of the network. Facility 135 may be a single computer such as is well known in the art or it may be a number of 15 computers accessing one or more common data bases. A front end switch 137 may be provided to allow incoming calls to be rolled to the next available computer communication port.

The connection device 111 and the network 20 directory facility 135 provide convenient access by large numbers of consumers to vendors who have video computer terminal marketing facilities 127 without having to separate out all of the small users that have jumped on the information highway.

25 Referring now to Figure 2, a perspective view of a preferred embodiment of the cards and board packaging for implementing the connection device 111 of the invention is shown. A case 211 is suitable for placement in the vicinity of a television set 117. 30 Contained within case 211 is a conventional cable TV conversion module 113 for receiving TV signals on a cable 225 from a cable TV company and converting them to frequencies and amplitudes acceptable to a TV set. The cable TV conversion module 113 contains a channel 35 tuner for selecting a desired frequency of signals and a display 215 for displaying the channel number of the frequency band being selected to the TV viewer. An

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infrared or other type of receiver 217 is provided through the face of connection device case 211 to receive infrared signals from a hand held remote control device 123, which is operable from a normal TV

- 5 viewing position in order to change channel selection, change audio volume or to perform any of the other adjustments that are normally associated with TV viewing.

Adjacent the normal cable TV conversion  
10 module 113 is a mother circuit board 221. A similar receiver 235 is connected to circuit board 221 to receive an optional keyboard input. Circuit board 221 has card sockets on its upper surface for receiving a number of standard and specialized circuit cards  
15 implementing the connection device 111 of the invention. One of the specialized circuit cards is a switching card 213 to connect, in a multiplexing fashion, the communication signals from their sources to the devices in which they will be utilized. An  
20 example standard card may be a printer adapter card 227. On the bottom side and on available upper surface of mother board 221 are a number of integrated circuit modules 231 for implementing the processor, memory, and a bus interconnecting the cards with each other and if  
25 desired, with unique circuits on the mother board 221. The aforementioned unique circuits of the board are also preferably embodied in integrated circuit modules mounted on the lower surface and on available upper surface of mother board 221. Another of the  
30 specialized cards, in one embodiment, is an Asynchronous Digital Subscriber Loop (ADSL) telephone modem 219 in order to allow the conversion device 111 of the invention to operate with a telephone communication systems implemented at least partially in  
35 twisted copper wire pairs 223. The use of specialized cards avoids the need for a specialized mother board, allowing a standard board from a personal computer

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application to be used to implement board 221. The use of a personal computer board simplifies the optional addition of a keyboard communicating via sensor 233 and other I/O devices to the connection device for using  
5 the connection device as a personal computer.

Attention is now drawn to the block diagram of Figure 3 wherein a preferred embodiment of a connection device of the invention is shown. A processor 301 appears at the top of the figure  
10 connected to the other blocks by a bi-directional system bus 303. Processor 301 is preferably a Digital Equipment Corporation Alpha 64 chip. Connected to the system bus is memory 305, preferably non-volatile random access memory, for storing the personal  
15 directory, the main menus, programs implementing the operations shown in following figures and the multi-tasking operating system. The programs and operating system may also be cost effectively stored in permanently written ROM chips that are mounted on the  
20 mother board.

Also connected to the system bus 303 is a modem 307 connected to a hyper fiber cable HFC to modulate, demodulate, separate and combine signals traveling on the fiber cable. It is to be understood  
25 that the modem 307 is preferred. However, in the event that fiber is not available, an Asynchronous Digital Subscriber Loop (ADSL) modem 309 may be employed and connected to the system bus 303 and video card 311 in the same manner as modem 307 is connected. One of the  
30 signals carried on the fiber cable is a conventional telephone signal which is demodulated and separated out onto line 313 for use in the ordinary manner in addition to the use contemplated in this connection device. Video with related audio is demodulated and  
35 separated onto line 317, which may be a multi-wire bus, for formatting and display, while signals from a video

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camera are provided on line 319 for modulation and combination into the available cable bandwidth.

The video lines 317 and 319 are connected to a video card 311 such as "ProVision" which is also 5 connected to the system bus 303 and controlled by processor 301. An NTSC or PALS video signal is provided by video card 311 on line 321. Likewise a similar line 323 provides a video camera signal to video card 311.

10 The other ends of lines 313, 321 and 323 are connected to electronic switches in the form of a circuit card 325. Switches 325 are also connected to a standard TV cable converter 327 in the event that a fiber cable is not available and modem 309 must be 15 used. Conventional television programming is received on either the standard cable 225 or on a portion of the bandwidth of fiber cable via modem 307. In either event, the connection device connects the switches 325 such that a consumer may watch television which is 20 displayed on set 117 and may be controlled by the universal hand held remote 123, by either controlling the cable box 327 or controlling the tuner in the set 117.

When the consumer wishes to invoke one of the 25 five main functions, an "auxiliary" control is activated on the universal hand held remote unit 123 which causes it to send signals recognized by remote receiver 329 also connected to system bus 303. The remote receiver provides the control signals onto bus 303 to the programs running in processor 301 which will be explained in greater detail subsequently in combination with the flow diagrams of Figures 4-9. In general, menu graphics are provided to video card 311 from memory 305 and switches 325 are actuated to 35 interrupt television programming to display the main menu on set 117. The consumer uses hand held remote 123 to send further signals to the processor to select

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from function options on the main menu. When the options have been selected, for example to execute a commercial transaction, the modem 307 is controlled to make a point to point connection to a network directory 5 as explained in more detail with respect to Figures 4-9.

While this connection is being made, the switches 325 may be controlled to return the display and picture on set 117 to television programming that 10 was being watched prior to the function change. This return may be facilitated if the television channel selections are being made at the cable tuner 327 or 307 and the TV set is left at a channel 2, 3, or 4 setting. Otherwise, the consumer may have to manually select one 15 of these channels prior to changing function and then manually re-select the channel on the TV using the remote 123 in order to return to watching TV.

When the connection is made, the switches 325 place the consumer in video conference with a 20 representative of a vendor as more fully described later. In the event that the consumer is using the TV set tuner, switches 325 preferably ring the consumer on a telephone 119 where the audio portion of the video conference can be more conveniently and privately 25 carried out. The consumer then can use remote 123 to bring the set to the chosen channel 2, 3 or 4. If the consumer desires, the camera 121 may be allowed to convey images from the consumer to the representative but in many cases the consumer may wish to block return 30 video, for example by covering the camera lens or by operating a manual switch on the connection device.

In order to use the connection device as a personal computer, additional cards 331, 333, 335 and 337 may be needed to drive I/O devices such a printer 35 339, a storage device in the form of a magnetic or compact disc 341, a graphic display monitor 343, and a keyboard 345 respectively.

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An embodiment of network directory facility 135, as described earlier with respect to Figure 1, may be in the form of a number of computers that may include at least the personal computer and 5 communication elements of the computer shown in Figure 3.

Referring now to Figure 4, a diagram of the functional options available to a consumer on the main menu is set out in a form that clarifies the temporary 10 returns to the previous state of a TV or computer function while awaiting the connection to the network directory or to a video conference. A main menu block 401 represents the current choice state that is active in the connection device and block 403 represents the 15 previous choice state that was active prior to the consumer having made the current choice.

For example, if the consumer was watching TV and remembers to make a personal video call, the consumer goes to the main menu 401, for example by 20 pressing the number zero on the hand held remote 123. The connection device then stops converting and displaying the TV signal but instead displays the stored main menu image shown in Figure 6. The consumer then selects the personal directory at 405 to find the 25 called party. The video call is made by the system.

If the communication line to the called party is busy, the system continues the task of placing the call while the connection device temporarily returns at 407 to the previous state 403 which causes the 30 connection device at 409 to resume converting and displaying the TV signal while the video call system continues to attempt to make the video connection. When the video connection is completed, the temporary returns 409 and 407 are terminated and the video 35 conversation goes forward. The display and video circuits now process the incoming video from the call instead of the TV signal.

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Similarly, when the consumer is using the connection device as a computer and wishes to investigate or purchase a good or service, the choices at main menu states 401 and 403 are different but the process is the same. After entering the current main menu, the network directory choice leads to a call to the network directory at 411. If the directory is currently busy, the system continues to place the call while the consumer can resume the task of working at the computer function via temporary return 413 and 415.

When the network directory call goes through, the temporary return terminates interrupting the executing personal computer program to display the menus from the network directory which will be shown in detail in following figures. After the consumer makes the category and vendor selection, the video conference call number and control parameters are provided to the connection device by the network directory and the connection device places the call to the vendor at 417. Again, if the vendor's equipment is busy, the system continues to place the call while the multi-tasking operating system allows the consumer to resume working on the personal computer function via the temporary returns 419 and 415.

When the call goes through, the consumer can conduct the desired transaction with the vendor. When completed, the state of the connection device reverts to the main menu via 421. If a previous state such as TV or computing is still active, the connection device goes back to TV via return 425 or computing via return 423, as two of many examples. Having returned, the previous state 403 once again becomes the current state 401 and the connection device continues to provide an entertainment or work function for the consumer.

Reference is now made to Figure 5 where a flow diagram of operation implementing the network

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directory inquiry portion of the invention are shown. It will be understood by those having skill in the art that these operations may be implemented by a general purpose processor which executes a stored program, by 5 special purpose processors or other hardware, or combinations of the above.

In block 501, the power is turned on to the connection device. The first operation is to display the main menu at block 503.

10 The consumer makes a function selection at the main menu, by moving a highlight 529, shown in Figure 10, up and down over the list of functions with the up and down arrows of the hand held remote 123 and then pressing enter on the hand held remote 123. In 15 another embodiment, the items in the list are numbered as also shown in Figure 10 and a choice is made by pressing the corresponding numbers on the number pad of the hand held remote 123.

Selection of the network directory function 20 is recognized at block 505 which starts the network directory operations in the connection device at block 507. The network directory operations first access a number of the centrally located network directory facility at block 509 and dial the facility at block 25 511. If the facility equipment is busy, flow is directed at decision block 513 to block 515 where the operation delays an appropriate time before again placing the call. While the delay and redial are occurring, a temporary return is effected at block 517 30 to a previously active function such as the presentation of TV signals or execution of personal computer programs.

In the event that no function was previously active, as would be the case from a power on start, the 35 temporary return will be to the main menu where another function such as TV or computing can be selected for the temporary diversion of the consumer while awaiting

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connection. Such selection during a temporary return becomes a previous function in order that the function may be interrupted in order to display the network directory menus when connection is made. If the 5 entrance to the flow of Figure 5 was via select main menu block 519, the temporary return would proceed directly to functions of TV block 521 or PC block 523.

When the facility is no longer busy, and the redial is successful, a connection decision is taken at 10 block 525 and the temporary return is terminated at block 527 to allow the flow to continue to Figure 6 where the network directory menus are accessed, received and displayed. As part of the connection process, an inquiry message is encrypted in the 15 connection device using an encryption key that is unique to that particular consumer's connection device and sent to the network directory where it is decrypted thereby verifying the identity of the connection device. In this manner the network directory is 20 assured that it is dealing with an authorized device and has at least a minimal level of protection against a virus.

In Figure 6, the logic flow diagram is set out for displaying the main category menu to the 25 consumer. Flow arrives from Figure 5 to block 601 where the image shown in Figure 11 is retrieved from memory at the network directory facility and sent to the consumer connection device. At the device it is received and displayed per block 603 for review and 30 category selection by the consumer.

For ease of explanation only, the remainder of this description will be of the alternate embodiment of numeric selection using the hand held remote control 123. At block 605 a numeric selection is made by the 35 consumer and a retail selection #1 is recognized at decision block 607 and sent back to the network directory facility at block 609 for continued

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processing in Figure 7. A finance selection #2 is recognized at decision block 611 and sent back to the network directory facility at block 613 for continued processing in Figure 7. Another unnamed selection #99 5 is recognized at decision block 615 and sent back to the network directory facility at block 617 for continued processing in accordance with the method shown in Figure 7. In order to simplify Figure 7, only selections #1 and #2 are shown therein.

10 In the event that none of the categories shown on the first category menu are what the consumer is seeking, the hand held remote is used to advance to the next screen of categories, for example by pressing the channel advance button or up arrow button which is 15 recognized at block 619. This action causes the connection device to send an increment display request to the network directory facility at block 621 which in the sequence of this explanation would access the image shown in Figure 12. At block 623 the image of Figure 20 12 is accessed and sent to the connection device for receipt and display at block 603. Alternately the consumer may wish to see a previous display and presses the channel retard button or down arrow button which is recognized at block 625. This action causes the 25 connection device to send a decrement display request to the network directory facility at block 627 which in the sequence of this explanation would access the image shown in Figure 10 which is the main menu at the connection device and therefore need not be sent.

30 Figure 7 shows the continued operations from Figure 6, selections #1 and #2. Selection of #2 causes the network directory facility at block 701 to access and send to the connection device, the image shown in Figure 14. At block 703 this image of finance 35 subcategories is received and displayed. No further explanation need be given for the finance selection, but the explanation of the operation of the system of

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the invention will be continued using the example of a retail category selection #1. The consumer selection #1 being sent to the network directory facility is received and causes the facility to access and send, at 5 block 705, the image of Figure 13 to the connection device. The image of Figure 13 is received and displayed at block 707.

At block 709 a numeric selection is made by the consumer using the hand held remote 123. A retail 10 clothing selection #1 is recognized at decision block 711 as only the numeral one and sent back to the network directory facility at block 713 for continued processing in Figure 8A. A vehicle selection #2 is recognized at decision block 715 as only the numeral 15 two and sent back to the network directory facility at block 717 for continued processing in Figure 8A. Another unnamed selection #99 is recognized at decision block 719 and sent back to the network directory facility at block 721 for continued processing in 20 Figure 8A.

Figure 8A shows the continued processing from Figure 7, selections #1 and #2. Selection of #2 causes the network directory facility at block 801 to access and send to the connection device, the image of a list 25 of vehicle vendors. At block 803 this image of vehicle vendors is received and displayed. No further explanation need be given for the retail vehicle selection #2, but the explanation of the operation will be continued using the example of a retail clothing 30 selection #1. The consumer selection #1 being sent to the network directory facility is received and causes the facility to access and send, at block 805, the image of Figure 15 to the connection device. The image of Figure 15 is received and displayed at block 807.

35 At block 809 a numeric selection is made by the consumer using the hand held remote. A retail clothing vendor selection #1 is recognized at decision

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block 811 as only the numeral one and sent back to the network directory facility at block 813 for continued processing. Likewise, a different vendor selection #2 is recognized at decision block 815 as only the numeral  
5 two and sent back to the network directory facility at block 817 for continued processing. Another unnamed selection #99 is recognized at decision block 819 and sent back to the network directory facility at block 821 for continued processing.

10           The continued processing at the network directory comprises accessing the control codes and communication access number of the selected vendor, recording the consumer's choice and sending the control information to the consumer's set top connection  
15 device. The record of the consumer's choice may be used by the network directory facility to provide feedback to a vendor regarding consumers who have chosen them. A numeral one selection causes these steps to occur at block 823. Likewise a selection of  
20 numeral two causes these steps to occur at block 825.

Having sent the vendor's communication access number, it is received at block 827 in Figure 8B of the connection device. The connection device is controlled thereby to dial the selected vendor at block 829 for a  
25 video conference marketing transaction. An option under the step of receiving the vendor's communication access number in block 827 is to store the number in the personal directory to avoid the need to go to the network directory to obtain the number for future  
30 transactions with the same vendor. In addition to the number itself, an identifying name will be received from the network directory facility when the option is chosen so that the consumer can select from among several entries in the personal directory without the  
35 need for having an optional keyboard at the connection device in order to add an identifying label. If the number is found to be busy at block 831, a temporary

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return may be taken at block 833 to a previously active function such as TV or personal computing in order that consumer satisfaction be retained. When the number is busy, a short time delay is taken at block 835 before 5 the number is re-dialed in order to reach the selected vendor.

When the call goes through at block 837, and after the vendor video facility is connected, the temporary return is terminated at block 841. When the 10 connection to the vendor facility has occurred, a ring back signal at block 839 is sent to the consumer telephone in order to allow the consumer to conveniently converse with the vendor's representative. After termination of the temporary return, a moving 15 image of the person of the vendor's representative is then displayed at block 843. Introductions are made, and the transaction proceeds as shown in the diagram of Figure 9.

Referring now to Figure 9, at block 901, the 20 vendor representative using the keyboard and/or other input devices at the vendor video facility, causes products to be displayed on the consumer's display and the representative's display. Verbal communication from the consumer is received by the representative and 25 choices of the consumer are entered at block 903 by the representative. The vendor facility then acts at blocks 905, 907 and 909 to decide which of product proposal routines 911, 913 or 915 to present to the consumer. The product proposal routines send screen 30 images to the consumer connection device for display and the images are simultaneously displayed to the vendor representative who explains the various options contained in the image to the consumer and answers the consumer's questions.

35 In the event that none of the proposed products are desired by the consumer, the verbal communication between consumer and representative

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determines whether another series of products are to be reviewed. If so, the representative enters a command at block 929 to display other products at block 901.

If the consumer decides to acquire one of the 5 displayed goods or services, the vendor representative enters the consumer choice at a keyboard and the keystroke is recognized by the program at blocks 917, 919, or 921 to produce and display to the consumer, one of the product application routines 923, 925, or 927 10 respectively. The transaction may then proceed as described in U.S. Patent 5,231,571, issued to the instant inventor, which patent is hereby incorporated herein by reference.

In the drawings and specification, there have 15 been disclosed typical preferred embodiments of the invention and, although specific terms are employed, they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being set forth in the following claims.

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THAT WHICH IS CLAIMED:

1. A method of serving consumers comprising the steps of:

generating at a connection device, a directory inquiry for a consumer desiring a product or  
5 a service;

receiving the inquiry at a directory location;

in response to the received inquiry,  
providing a menu of vendors to the connection device,  
10 the menu having a graphic portion for display to the consumer and a coded portion for controlling the connection device; and

controlling the connection device to establish an interactive communication session with a  
15 vendor selected by the consumer from the menu.

2. A method according to Claim 1 wherein the step of generating an inquiry further comprises the steps of:

20 displaying to the consumer, a control screen showing a plurality of connection device functions;

highlighting one of the functions;

accepting a consumer input to move the highlight to a next function;

25 accepting a consumer input to select the highlighted function; and

connecting the connection device to the directory location.

3. A method according to Claim 1 wherein the step of generating an inquiry further comprises the steps of:

displaying to the consumer, a control screen showing a plurality of numbered connection device functions;

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accepting a consumer number input to select a correspondingly numbered function; and  
connecting the connection device to the directory location.

5           4. A method according to Claim 1 wherein the step of providing a menu of vendors further comprises the steps of:

               sending a category menu to the connection device;

10           generating a category selection at the connection device;

               receiving the category selection at the directory location; and

15           sending a selection menu to the connection device, the selection menu containing display graphics and control codes for each of a plurality of vendors within the category of vendors.

20           5. A method according to Claim 1 wherein the step of controlling the connection device to establish an interactive communication session further comprises the steps of:

               displaying to the consumer, a control screen showing display graphics of a plurality of vendors;

25           accepting consumer input to select one of the vendors;

               obtaining from the directory location, a phone number of the selected vendor; and

               connecting the connection device to a vendor station of the selected vendor.

30           6. A method according to Claim 1 wherein the step of connecting the connection device to the directory location further comprises the steps of:

               encrypting the inquiry with an encryption key that is unique to the connection device; and

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decrypting the inquiry at the directory location to verify the identity of the connection device.

7. A method according to Claim 5 wherein  
5 the step of obtaining a phone number further comprises the steps of:

storing the display graphics and control codes of the selected vendor into a personal directory; accessing a history of the consumer's  
10 preferences; and

sorting the display graphics and control codes of the vendors within a category based upon an estimate of the consumer's preference.

8. A method according to Claim 7 wherein  
15 the step of storing further comprises the step of:

placing into a sequence of consumer preference, the display graphics and control codes of vendors within the personal directory.

9. A method according to Claim 7 wherein  
20 the step of storing further comprises the steps of:  
determining whether the consumer has provided a sequence preference and in the absence of such preference;

25 placing first in order, the display graphics and control codes of a vendor within the personal directory whom the consumer has selected most recently.

10. A method according to Claim 5 wherein  
the step of obtaining from the directory location, a phone number of the selected vendor further comprises  
30 the steps of:

recording in a preference log at the directory location, the identity of the selected vendor.

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sending to the connection device, a primary phone number and alternate phone numbers of stations of the selected vendor.

11. A method of serving consumers comprising  
5 the steps of:

displaying under control of a connection device, a menu of functions that may be performed using the connection device, the functions including reception and presentation of television programming,  
10 execution of personal computer programs and video conferencing;

accepting consumer input to receive and present television programming;

interrupting the presentation of television  
15 programming to accept a subsequent consumer input to make a directory inquiry;

generating at the connection device, a directory inquiry for a consumer desiring a product or a service;

20 returning temporarily to the presentation of television programming when a directory location is busy;

receiving the inquiry at the directory location;

25 terminating the temporary return to the presentation of television programming;

providing a menu of vendors to the connection device, the menu having a graphic portion for display to the consumer;

30 receiving from the connection device, the consumer's vendor selection;

providing to the connection device, a coded portion of the menu of vendors for controlling the connection device; and

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controlling the connection device to establish an interactive video communication session with a vendor selected by the consumer from the menu.

12. A method according to Claim 11 further comprising the step of:

storing a copy of the coded portion in a personal directory in the connection device for later use by the connection device in establishing an interactive video communication session with the same vendor.

13. A method according to Claim 12 wherein the copy of the coded portion includes an identification portion for later display to the consumer, the identification portion being a form of the graphic portion previously provided to the connection device.

14. A connection device for serving consumers in a video conferencing environment comprising:

a computer having a processor, memory, and a system bus;

a wide band modem;  
video circuits connected to the bus and to the modem for converting data to a moving image allowing presentation on a TV;

switching circuits connected to the bus, the modem and the video circuits, which connect the modem and the video circuits to a TV and to a telephone;

means for controlling the switching circuits to display a menu of functions that may be performed using the connection device, the functions including reception and presentation of television programming, execution of personal computer programs and video conferencing;

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a receiver which accepts consumer input to receive and present television programming;

means for presenting television programming and for accepting a subsequent consumer input to make a  
5 directory inquiry;

means for generating a directory inquiry for a consumer desiring a product or a service;

means for returning temporarily to the presentation of television programming when a directory  
10 location is busy;

means for terminating the temporary return to the presentation of television programming when a menu of vendors has been provided to the connection device by the directory location, the menu having a graphic  
15 portion for display to the consumer; and

means for controlling the connection device to establish an interactive video communication session with a vendor selected by the consumer from the menu.

15. A connection device according to Claim  
20 14 further comprising:

means for storing a copy of the coded portion of a vendor entry, for a particular vendor selected from the menu of vendors by the consumer, into a personal directory in the memory of the computer for  
25 later use by the connection device in establishing another interactive video communication session with the same vendor.

16. A method of initiating a video conference comprising the steps of:

30 initiating from a connection device to a directory location, a request for a video conference with video conferencing providers of a predetermined category;

providing to the connection device by the  
35 video conference directory location, a listing of video

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conferencing providers of the predetermined category; and

initiating from the connection device, a video conference with a selected one of the video conferencing providers from the list.

17. A method according to Claim 16 wherein said step of initiating a video conference comprises the steps of:

10 requesting from the connection device to the directory location, video conferencing connection information for the selected one of the video conferencing providers;

15 receiving from the directory location, the video conferencing connection information for the selected one of the video conferencing providers; and

initiating from the connection device, a video conference with a selected one of the video conferencing providers from the list, using the received connection information.

20 18. A method of initiating a video conference comprising the steps of:

initiating from a connection device to a directory location, a request for a video conference with video conferencing providers of a predetermined category;

receiving at the connection device, a listing of video conferencing providers of the predetermined category; and

30 initiating from the connection device, a video conference with a selected one of the video conferencing providers from the list.

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19. A method according to Claim 18 wherein said step of initiating a video conference comprises the steps of:

requesting from the connection device to the  
5. directory location, video conferencing connection  
information for the selected one of the video  
conferencing providers;

receiving the video conferencing connection  
information for the selected one of the video  
10 conferencing providers; and

initiating from the connection device, a  
video conference with a selected one of the video  
conferencing providers from the list, using the  
received connection information.

15 20. A video conference directory method comprising the steps of:

receiving at a directory location, a request  
from a connection device for a video conference with  
video conferencing providers of a predetermined  
20 category; and

providing to the connection device by the  
video conference directory location, a listing of video  
conferencing providers of the predetermined category,  
such that a user at the connection device can initiate  
25 a video conference with a selected one of the video  
conferencing providers from the list.

21. A video conferencing directory method according to Claim 20 wherein said providing step comprises the step of providing to the connection  
30 device by the video conference directory location, a listing of video conferencing providers of the predetermined category, the listing including video conference connection information for the video conferencing providers of the predetermined category.

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22. A video conference system comprising:  
a plurality of connection devices;  
a directory location; and  
a plurality of video conferencing providers;  
5 each connection device including means for  
initiating to said directory location, a request for a  
video conference with video conferencing providers of a  
predetermined category;  
said directory location including means,  
10 responsive to said initiating means, for providing to  
the connection device, a listing of video conferencing  
providers of the predetermined category;  
each connection device further including  
means, responsive to said providing means, for  
15 initiating a video conference with a selected one of  
the video conferencing providers from the list.

23. A video conference connection device  
comprising:  
means for initiating a request for a video  
20 conference with video conferencing providers of a  
predetermined category;  
means for receiving a listing of video  
conferencing providers of the predetermined category;  
and  
25 means for initiating a video conference with  
a selected one of the video conferencing providers from  
the list.

24. A video conference directory comprising:  
means for receiving a request for a video  
30 conference with video conferencing providers of a  
predetermined category; and  
means, responsive to said receiving means,  
for providing a listing of video conferencing providers  
of the predetermined category.

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25. A video conferencing directory according to Claim 24 wherein said providing means comprises means for providing a listing of video conferencing providers of the predetermined category, the listing 5 including video conference connection information for the video conferencing providers of the predetermined category.

26. A method for connecting a computer to an external device comprising the steps of:

10 displaying first information;  
accepting a user request to connect the computer to an external device; and  
continuing to display said first information until a connection is established to the external 15 device.

27. A method according to Claim 26 further comprising the step of:

displaying information from the external device instead of the first information, when the 20 connection is established with the external device.

28. A method according to Claim 26 wherein said first information is a television program.

29. A computer comprising:  
means for displaying first information;  
25 means for accepting a user request to connect the computer to an external device; and  
means, responsive to said accepting means, for continuing to display said first information until a connection is established to the external device.

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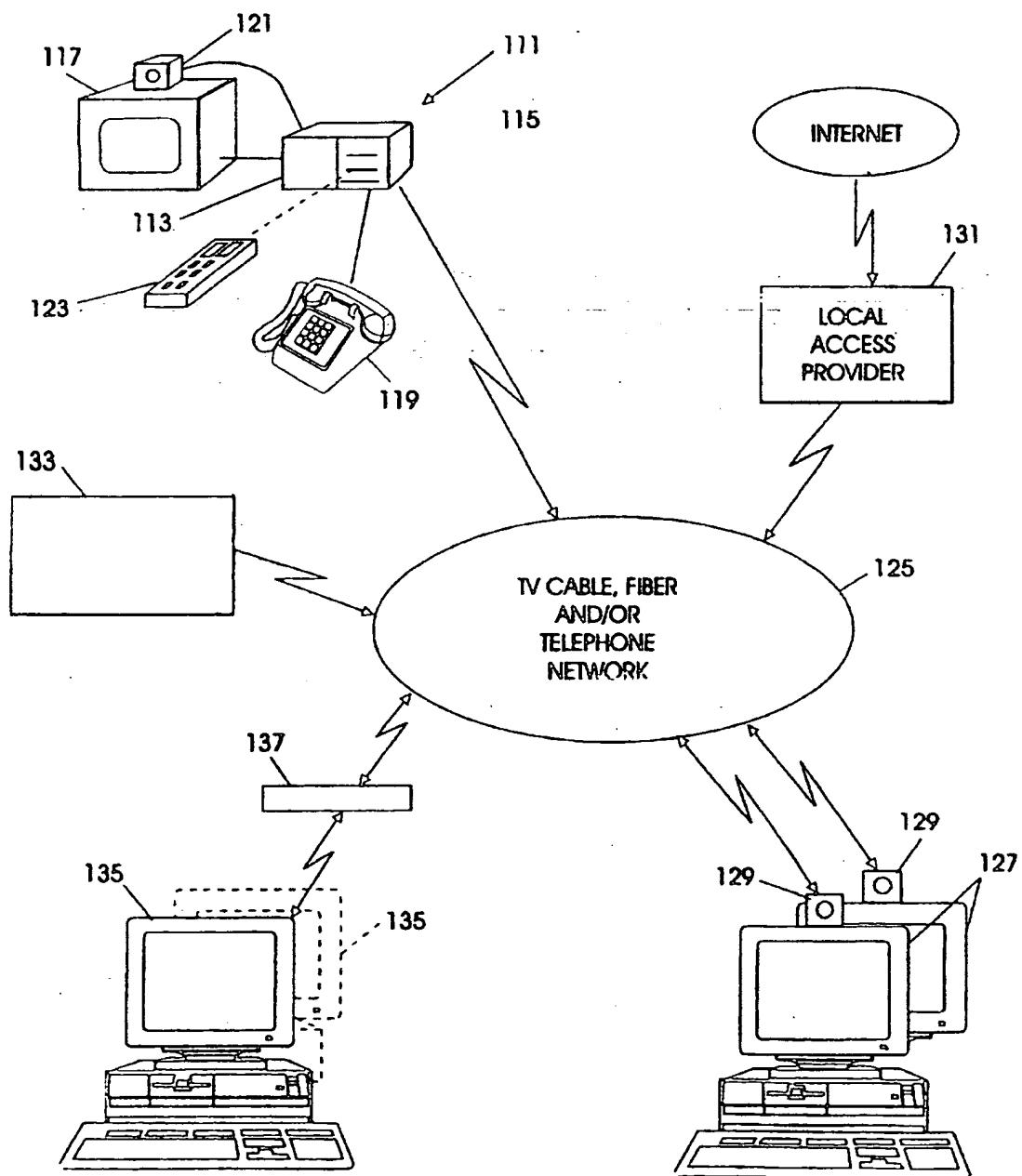
30. A computer according to Claim 29 further comprising:

means for displaying information from the external device instead of the first information, when  
5 the connection is established with the external device.

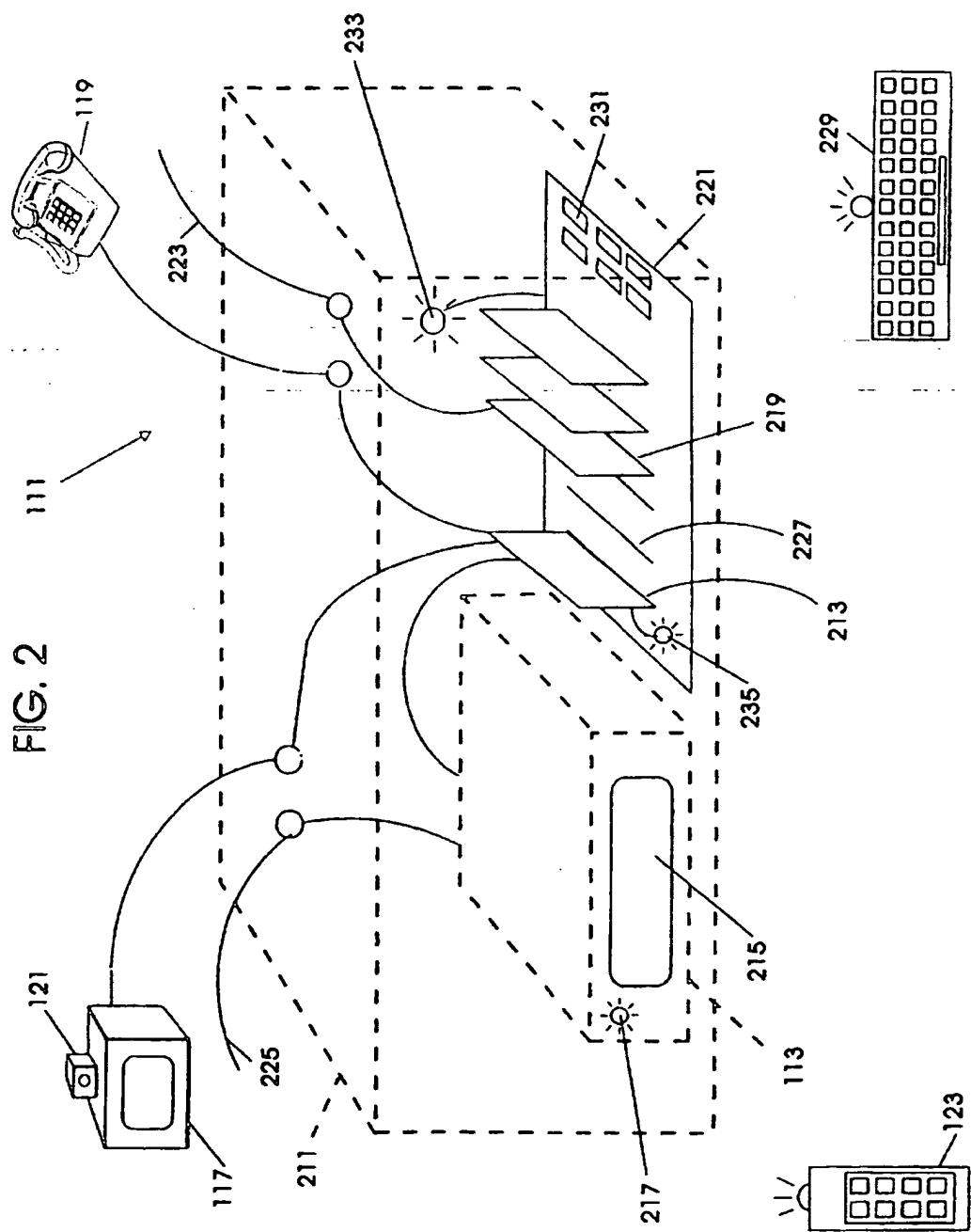
31. A computer according to Claim 29 wherein said first information is a television program.

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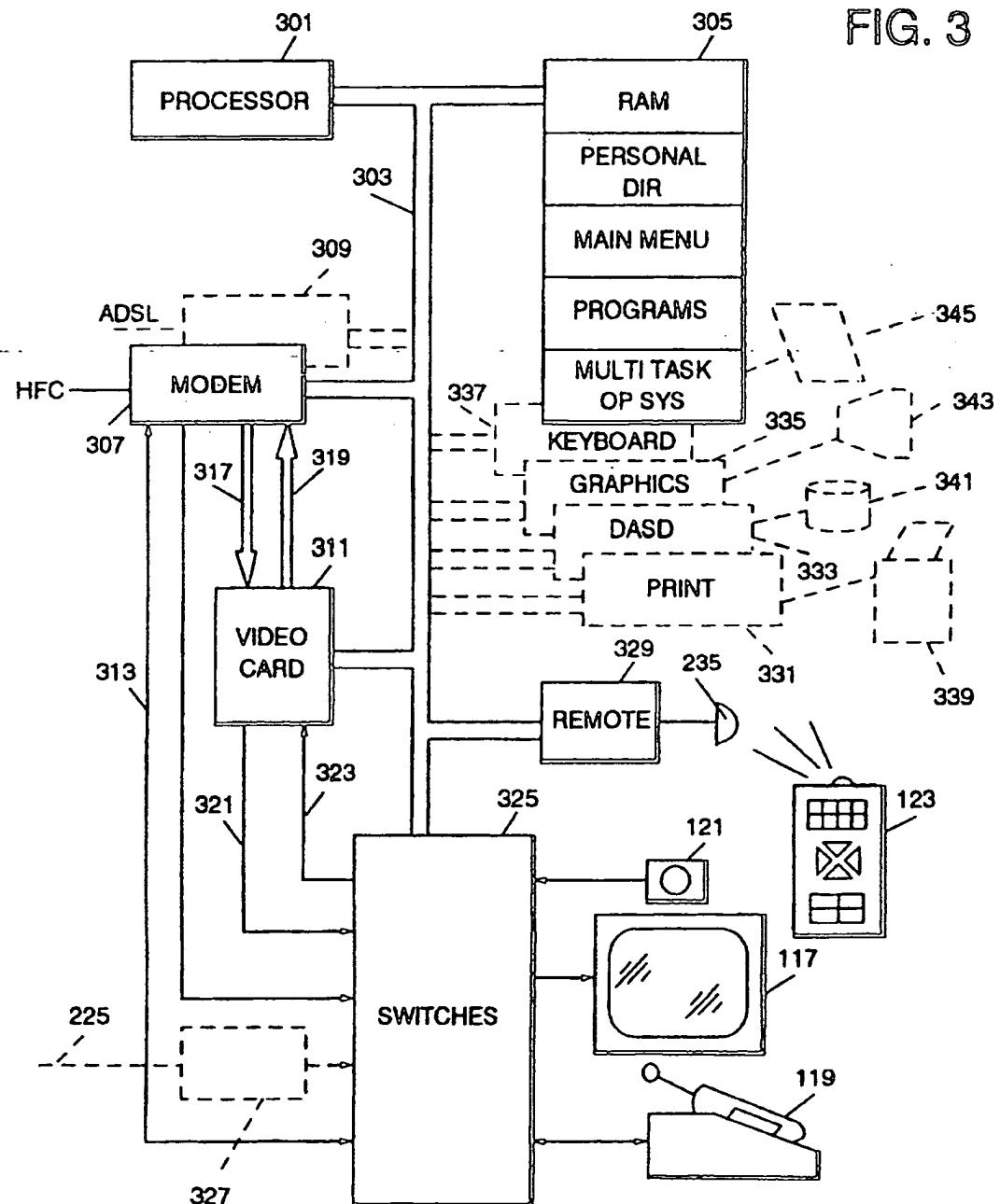
FIG. 1



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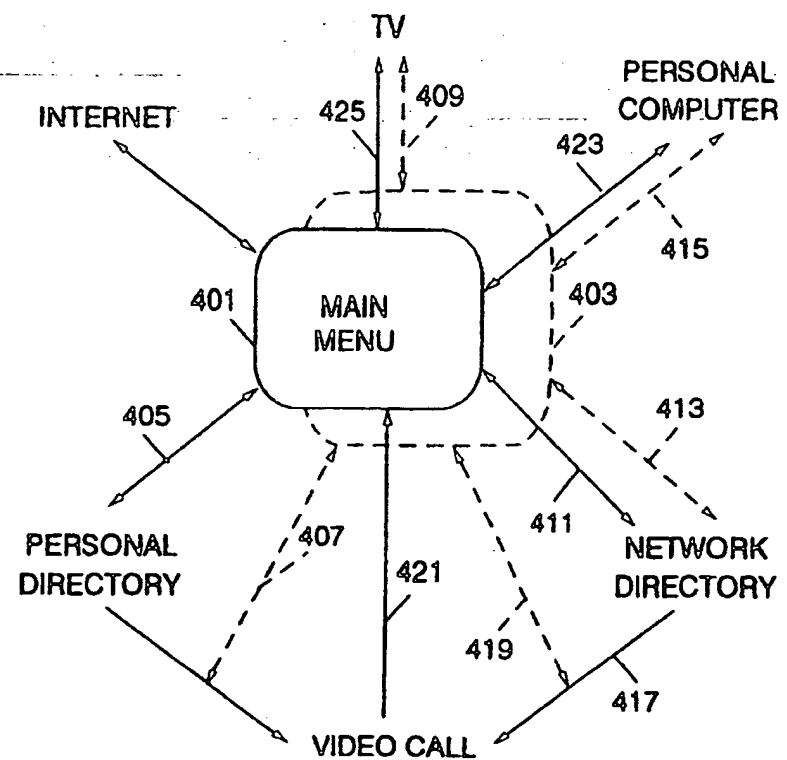


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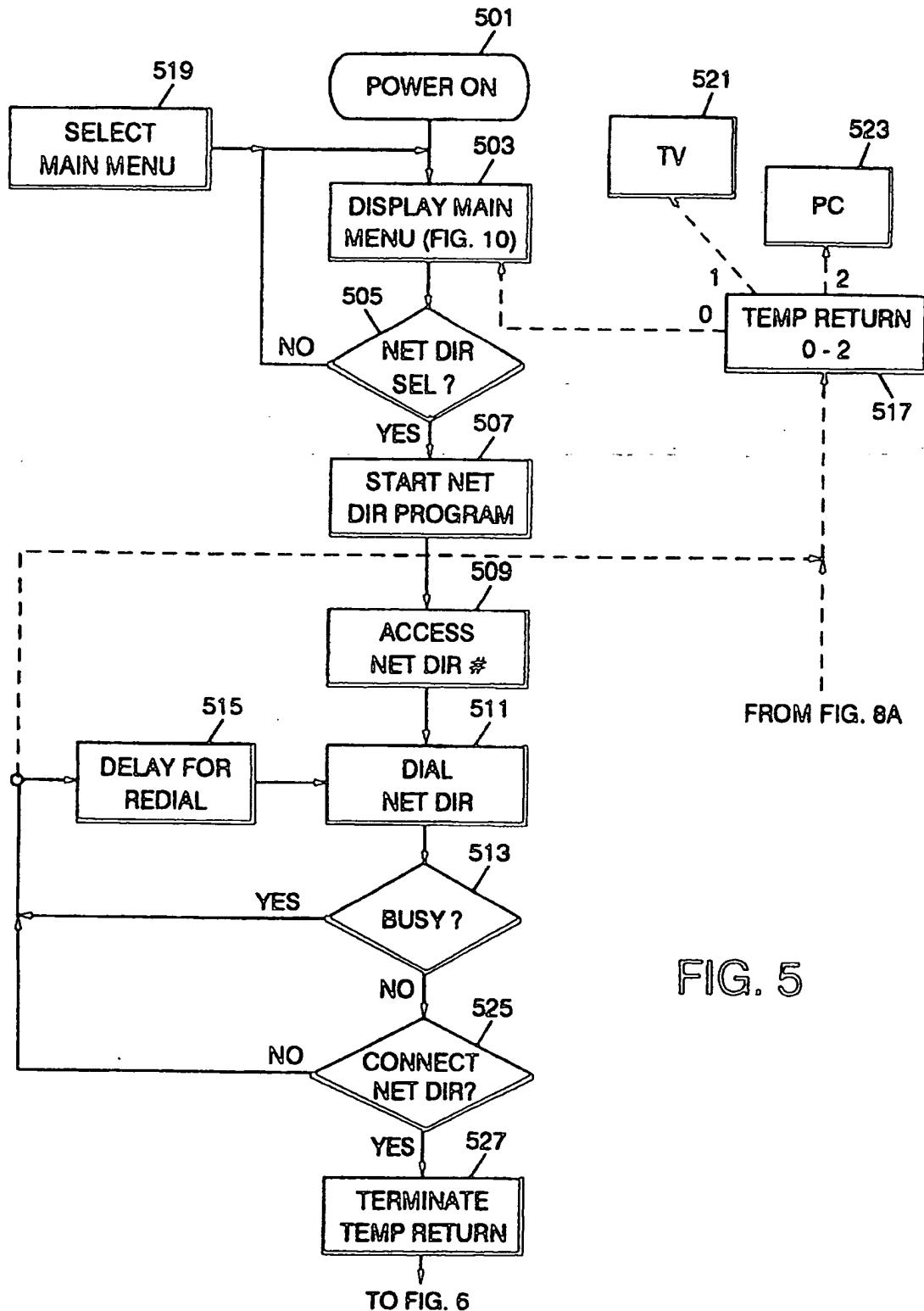


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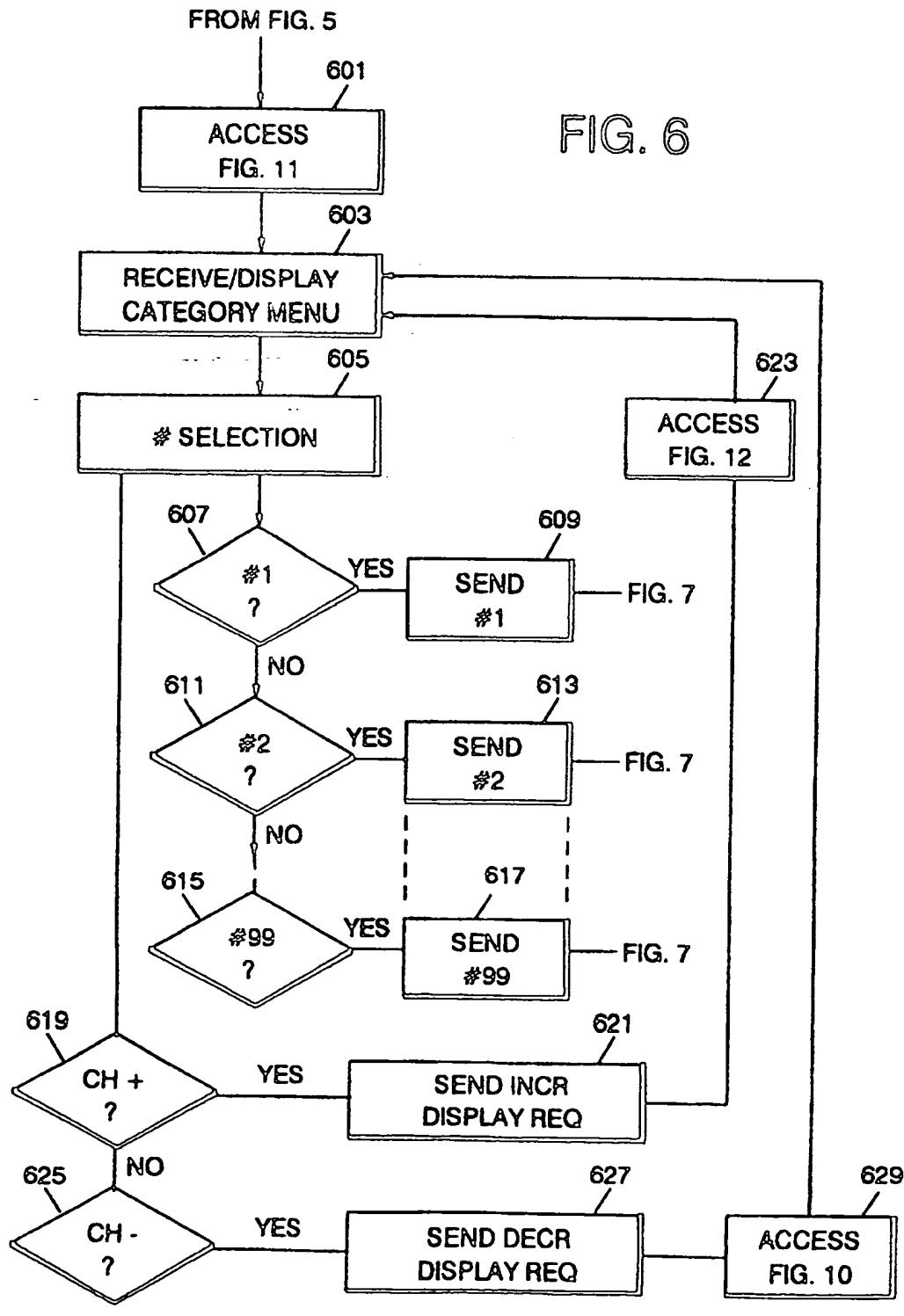
FIG. 4



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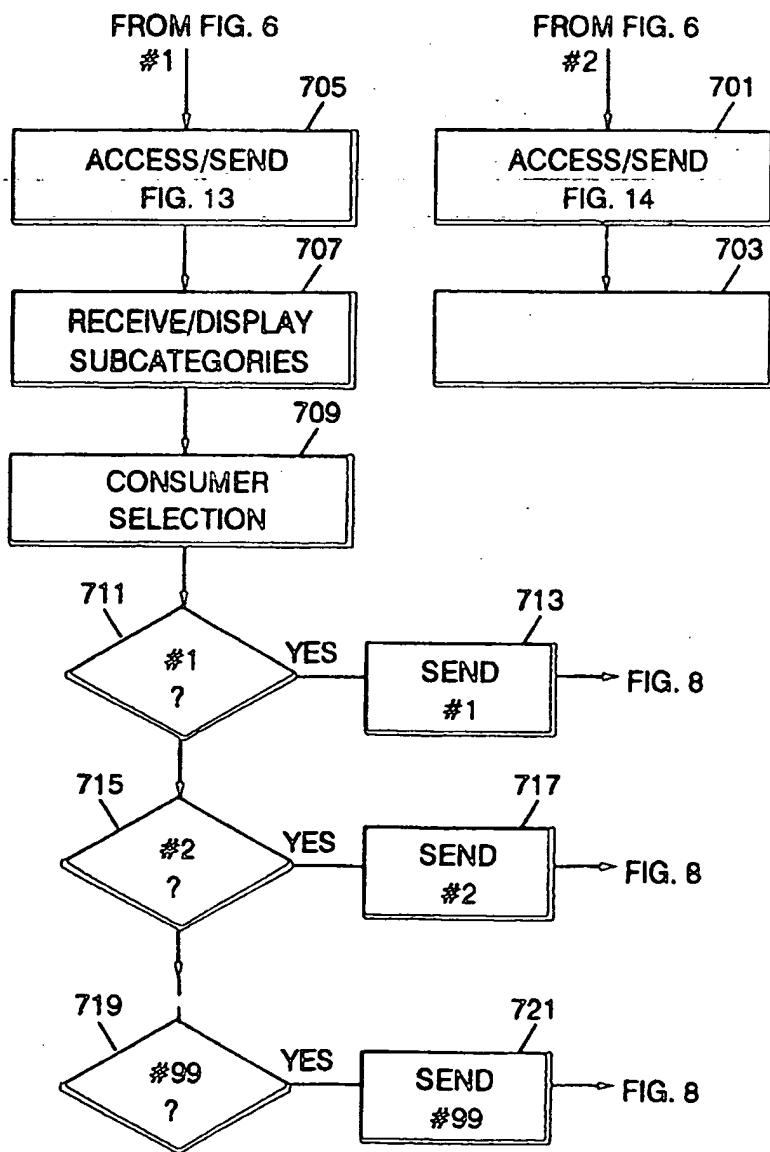


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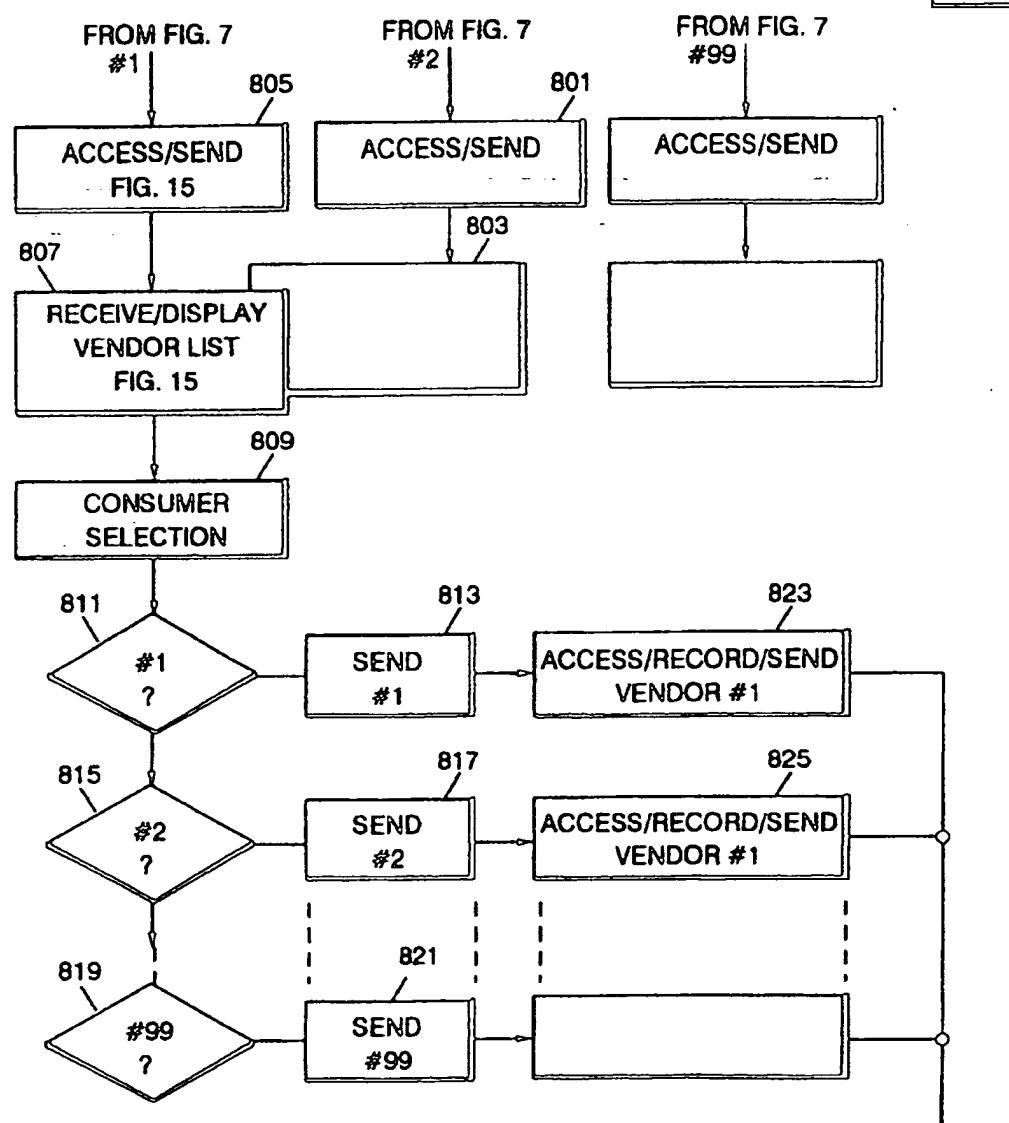
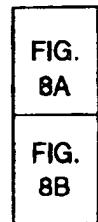
FIG. 7



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FIG. 8

FIG. 8A



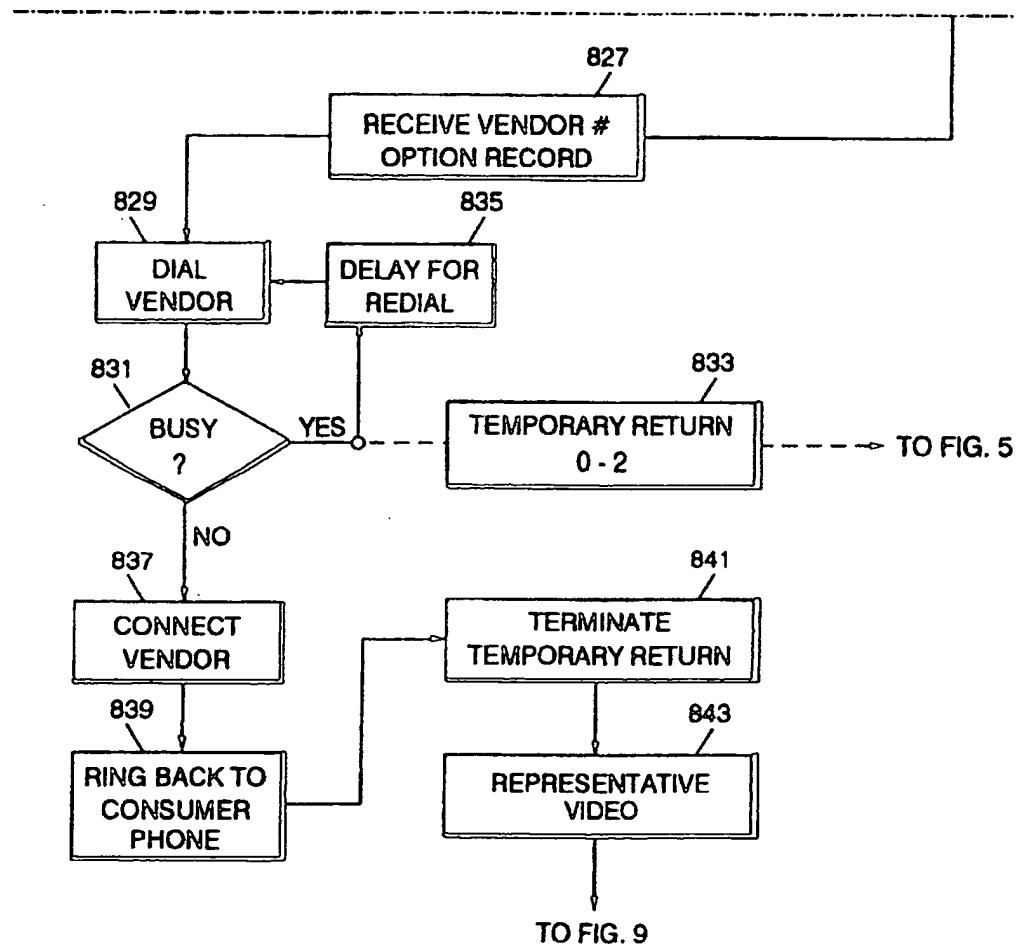
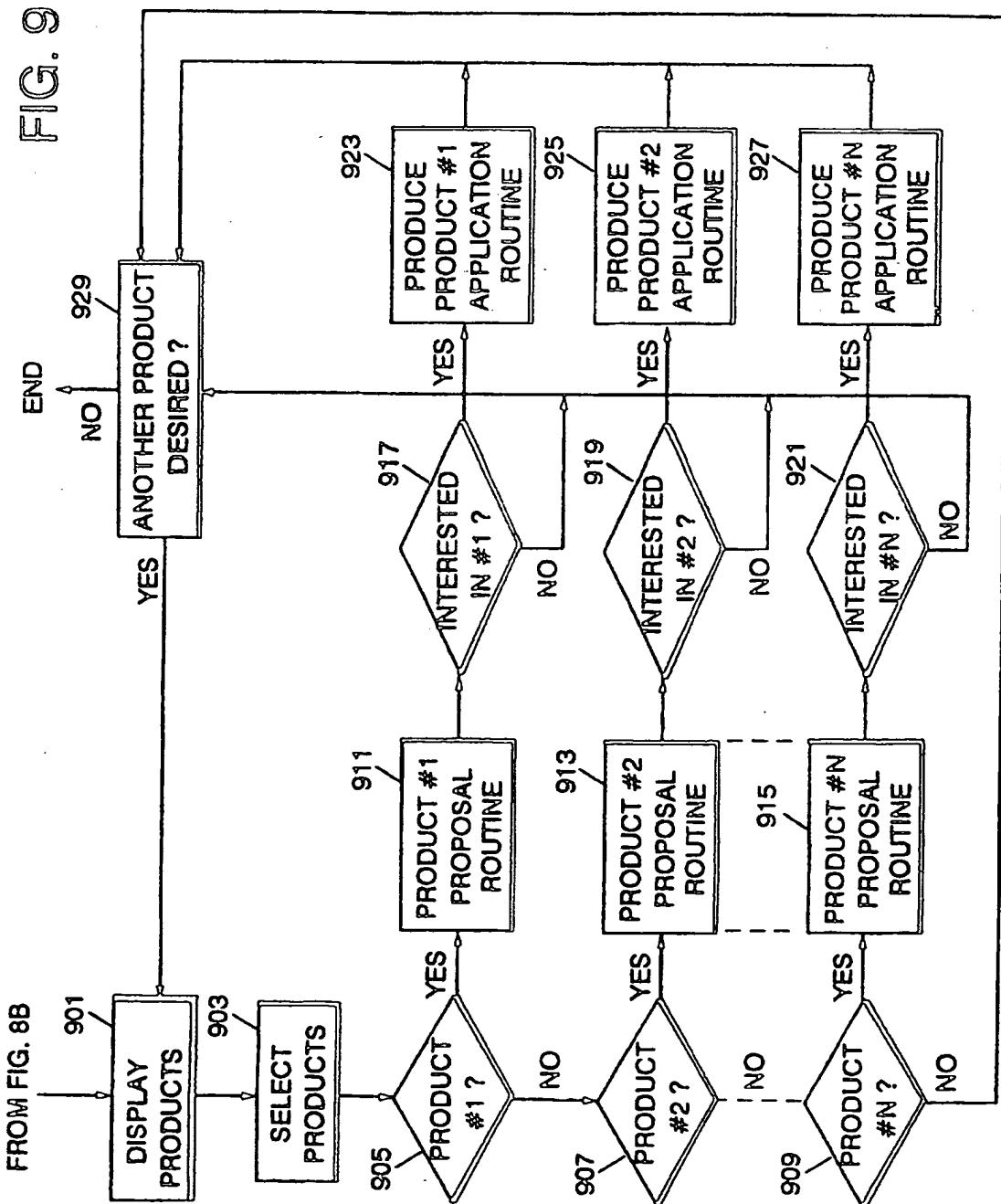


FIG. 8B

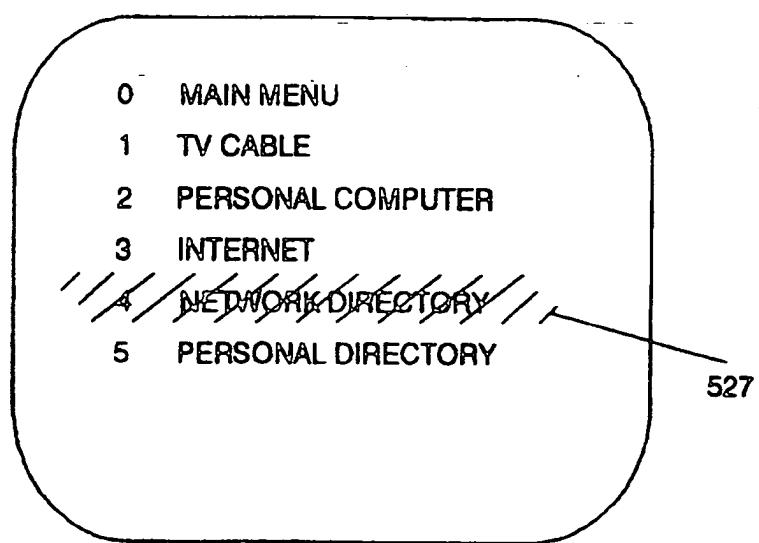
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FIG. 9



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FIG. 10



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FIG. 11

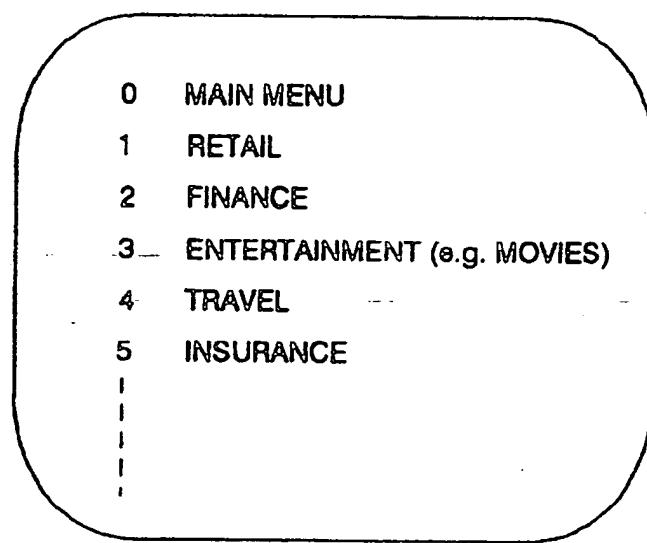
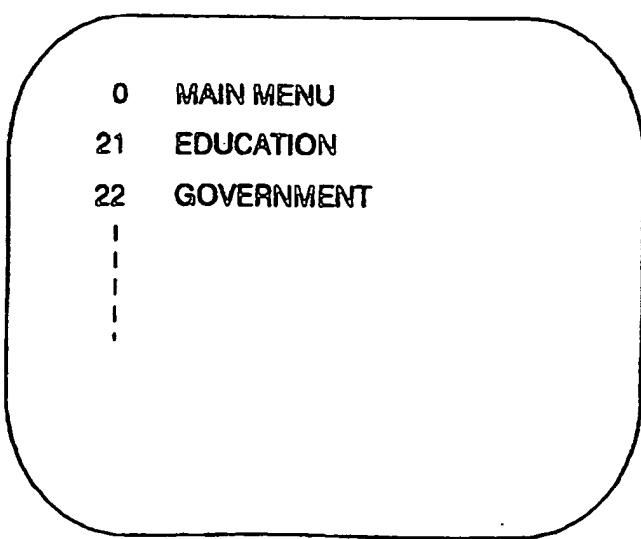


FIG. 12



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FIG. 13

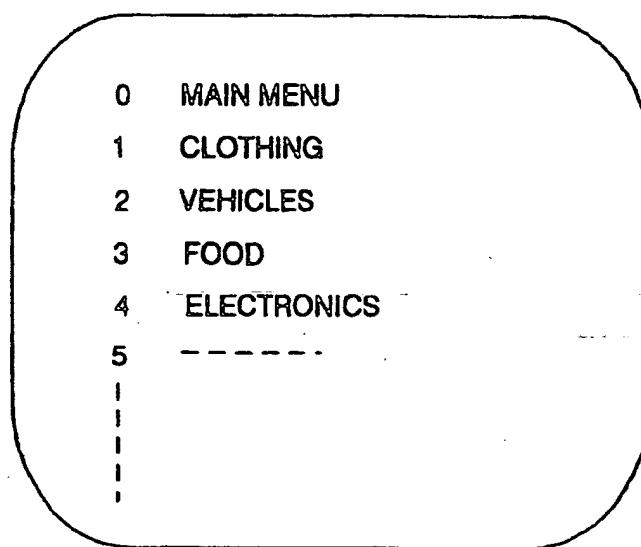
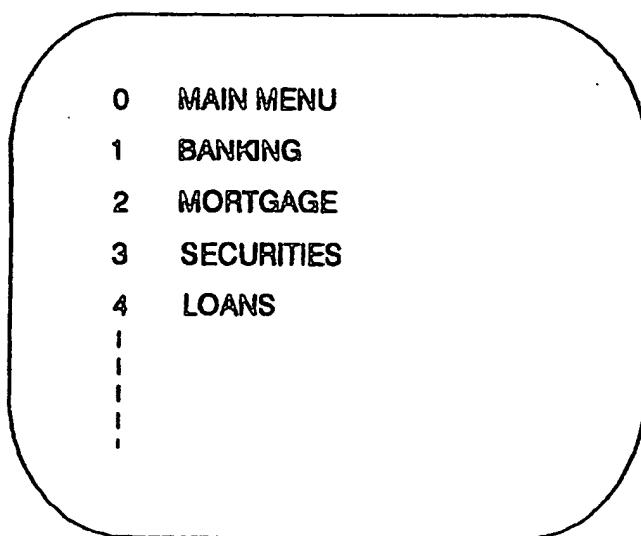
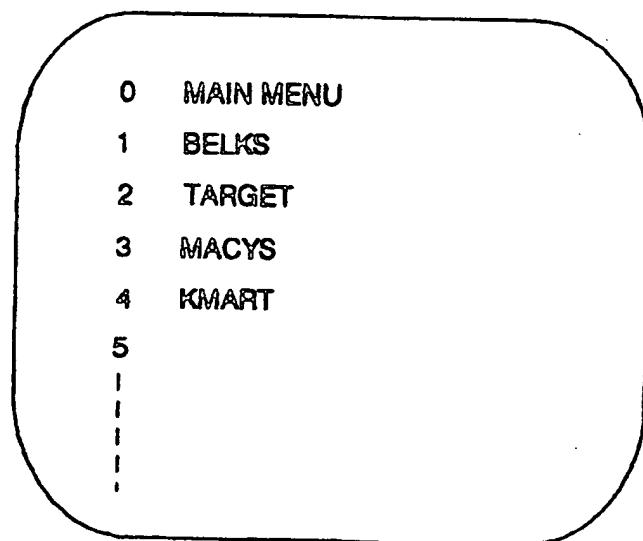


FIG. 14



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FIG. 15



# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 97/06895

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 H04N7/15 H04N7/173

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 H04N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 95 01058 A (APPLE COMPUTER) 5 January 1995	1-5,7-31
Y	see page 2, line 7 - page 4, line 19 see page 25, line 1 - page 33, line 7 see page 37, line 7 - line 16 see page 40, line 1 - page 44, line 18 see page 53, line 1 - page 58, line 22 see page 66, line 1 - page 67, line 6 see page 69, line 6 - page 73, line 14 see figures 1-50 --- WO 95 17796 A (URMET SUD COSTR ELETT TELEFON ;MONDARDINI MASSIMO (IT)) 29 June 1995 see page 3, line 23 - page 8, line 24 see figures 1,2 --- -/-/	6
		6
		-/-/

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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1

Date of the actual completion of the international search

Date of mailing of the international search report

19 August 1997

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## INTERNATIONAL SEARCH REPORT

Inten	tal Application No
PCT/US 97/06895	

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>AT &amp; T TECHNICAL JOURNAL, vol. 73, no. 6, 1 November 1994, NEW YORK, NY, US, pages 81-92, XP000476712 ROY R R ET AL: "AN ANALYSIS OF UNIVERSAL MULTIMEDIA SWITCHING ARCHITECTURES" see page 81, left-hand column, line 1 - page 85, left-hand column, line 11 see figure 1</p> <p>---</p> <p>ELECTRONICS AND COMMUNICATION ENGINEERING JOURNAL, vol. 8, no. 1, 1 February 1996, LONDON, GB, pages 13-23, XP000554246 FORREST J R: "TELEMEDIA: A SURVIVAL GUIDE TO THE FIFTH DIMENSION"</p> <p>-----</p>	1-5,7-31
A		
I		

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No  
PCT/US 97/06895

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WO 9517796 A	29-06-95	IT T0930967 A	20-06-95